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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. 2002-CE-32-AD; Amendment 39-13075; AD 2003-04-26]**

**RIN 2120-AA64**

### **Airworthiness Directives; Raytheon Aircraft Company Model 1900D Airplanes**

**AGENCY:** Federal Aviation Administration, DOT.

**ACTION:** Final rule.

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**SUMMARY:** This amendment adopts a new airworthiness directive (AD) that applies to certain Raytheon Aircraft Company (Raytheon) Model 1900D airplanes. This AD requires you to inspect the alternating current (AC) inverter and modify the AC inverter and inverter sync wire shield. This AD is the result of reports that electrical noise causes the inverter to shut down in flight with loss of AC-powered flight instruments. The actions specified by this AD are intended to prevent electrical noise causing the inverter to shut down, which could result in failure of key aircraft electrical systems. Such failure could lead to loss of flight instruments during flight.

**DATES:** This AD becomes effective on April 21, 2003.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in the regulations as of April 21, 2003.

**ADDRESSES:** You may get the service information referenced in this AD from Raytheon Aircraft Company, 9709 E. Central, Wichita, Kansas 67201-0085; telephone: (800) 429-5372 or (316) 676-3140. You may view this information at the Federal Aviation Administration (FAA), Central Region, Office of the Regional Counsel, Attention: Rules Docket No. 2002-CE-32-AD, 901 Locust, Room 506, Kansas City, Missouri 64106; or at the Office of the Federal Register, 800 North Capitol Street, NW., Suite 700, Washington, DC.

**FOR FURTHER INFORMATION CONTACT:** Todd Dixon, Aerospace Engineer, FAA, Wichita Aircraft Certification Office, 1801 Airport Road, Room 100, Wichita, Kansas 67209; telephone: (316) 946-4152; facsimile: (316) 946-4407.

## SUPPLEMENTARY INFORMATION:

### Discussion

*What events have caused this AD?* The FAA has received nine reports of electrical noise causing the alternating current (AC) inverter to shutdown on certain airplanes. These airplanes are equipped with KGS Electronics AC Inverter part number (P/N) SPC-10(PW), Mod 2, serial numbers 306 to 803. The shutdown of the inverter resulted in the loss of the electronic flight information system (EFIS), Radio Magnetic Indicator (RMI), and related AC-powered systems. Some airplanes experienced the loss of engine torque indication.

*What is the potential impact if FAA took no action?* Such failure of the inverter could lead to loss of flight instruments during a critical phase of flight.

*Has FAA taken any action to this point?* We issued a proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to include an AD that would apply to certain Raytheon Model 1900D airplanes. This proposal was published in the Federal Register as a notice of proposed rulemaking (NPRM) on October 25, 2002 (67 FR 65519). The NPRM proposed to require you to inspect the alternating current (AC) inverter and modify the AC inverter and inverter sync wire shield.

*Was the public invited to comment?* The FAA encouraged interested persons to participate in the making of this amendment. We did not receive any comments on the proposed rule or on our determination of the cost to the public.

### FAA's Determination

*What is FAA's final determination on this issue?* After careful review of all available information related to the subject presented above, we have determined that air safety and the public interest require the adoption of the rule as proposed except for minor editorial corrections. We have determined that these minor corrections:

- Provide the intent that was proposed in the NPRM for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM.

### Cost Impact

*How many airplanes does this AD impact?* We estimate that this AD affects 232 airplanes in the U.S. registry.

*What is the cost impact of this AD on owners/operators of the affected airplanes?* We estimate the following costs to accomplish the AC inverter inspection:

Labor cost	Parts cost	Total cost per airplane	Total cost on U.S. operators
2 workhours x \$60 = \$120 for each inverter.	No cost for parts	\$240	232 x \$240 = \$55,680

We estimate the following costs to accomplish any necessary AC inverter modification that would be required based on the results of the inspection. We have no way of determining the number of airplanes that may need such modification:

<b>Labor cost</b>	<b>Parts cost</b>	<b>Total cost per airplane</b>
2 workhours x \$60 = \$120 for each inverter (\$240 per aircraft).	\$310	\$550 for each airplane.

We estimate the following costs to accomplish any necessary AC inverter sync wire shield modification that would be required based on the results of the inspection. We have no way of determining the number of airplanes that may need such modification:

<b>Labor cost</b>	<b>Parts cost</b>	<b>Total cost per airplane</b>
8 workhours x \$60 = \$480	\$6.00	\$486

### **Compliance Time of This AD**

*What would be the compliance time of this AD?* The compliance time of this AD is within 6 months after the effective date of the AD.

*Why is the compliance time presented in calendar time instead of hours time-in-service (TIS)?* Failure of the aircraft AC inverters is only unsafe during airplane operation. However, this unsafe condition is not a result of the number of times the airplane is operated. The chance of this situation occurring is the same for an airplane with 50 hours time-in-service (TIS) as it is for an airplane with 1,000 hours TIS.

For this reason, the FAA has determined that a compliance based on calendar time will be utilized in this AD in order to assure that the unsafe condition is addressed on all airplanes in a reasonable time period.

### **Regulatory Impact**

*Does this AD impact various entities?* The regulations adopted herein will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, it is determined that this final rule does not have federalism implications under Executive Order 13132.

*Does this AD involve a significant rule or regulatory action?* For the reasons discussed above, I certify that this action (1) is not a "significant regulatory action" under Executive Order 12866; (2) is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and (3) will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. A copy of the final evaluation prepared for this action is contained in the Rules Docket. A copy of it may be obtained by contacting the Rules Docket at the location provided under the caption ADDRESSES.

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### **Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

## **PART 39–AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

### **§ 39.13 [Amended]**

2. FAA amends § 39.13 by adding a new AD to read as follows:

# AIRWORTHINESS DIRECTIVE



Aircraft Certification Service  
Washington, DC

U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

*We post ADs on the internet at "[www.faa.gov](http://www.faa.gov)"*

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

**2003-04-26 Raytheon Aircraft Company:** Amendment 39-13075; Docket No. 2002-CE-32-AD.

(a) *What airplanes are affected by this AD?* This AD affects the following airplane models and serial numbers that are certificated in any category:

- (1) Group 1 Airplanes: Model 1900D, serial numbers UE-1 through UE-265.
- (2) Group 2 Airplanes: Model 1900D, serial numbers UE-266 through UE-388.
- (3) Group 3 Airplanes: Model 1900D, serial numbers UE-389 through UE-410.

(b) *Who must comply with this AD?* Anyone who wishes to operate any of the airplanes identified in paragraph (a) of this AD must comply with this AD.

(c) *What problem does this AD address?* The actions specified by this AD are intended to prevent electrical noise causing the alternating current (AC) inverter to shut down, which could result in failure of key aircraft electrical systems. Such failure could lead to loss of flight instruments during a critical phase of flight.

**Note 1:** Refer to paragraph (a) to determine if your airplane is assigned to Group 1, Group 2, or Group 3. If your airplane is assigned to Group 1, Group 2, or Group 3, you only have to accomplish the requirements of either paragraph (d), (e), or (f), respectively.

(d) *What actions must I accomplish to address this problem if I have a Group 1 airplane?* To address this problem, you must accomplish the following:

Actions	Compliance	Procedures
<p>(1) Inspect the AC inverter to determine if the KGS Electronics AC Inverter part number (P/N) SPC–10(PW), with a serial number in the range of 306 through 803, is installed and is identified as Mod 2DD.</p> <p>(i) This may be accomplished by checking the logbook and positively showing that a Mod 2DD inverter is installed. A person holding a pilot's certificate may accomplish this check.</p> <p>(ii) If, by checking the airplane logbook or by visual inspection, it can be positively shown that a Mod 2DD inverter is installed, then the requirements of paragraph (d)(2) of this AD do not apply. You must make an entry into the aircraft records that shows compliance with this portion of the AD, in accordance with section 43.9 of the Federal Aviation Regulations (14 CFR 43.9).</p>	<p>Within 6 months after April 21, 2003 (the effective date of this AD).</p>	<p>In accordance with the ACCOMPLISHMENT INSTRUCTIONS section of Raytheon Aircraft Service Bulletin SB 24–3215, Rev. 1, June 2001.</p>
<p>(2) If during the inspection required in paragraph (d)(1), it is found that the Mod 2DD inverter is not installed, accomplish the AC inverter modification.</p>	<p>Before further flight after the paragraph (d)(1) inspection of this AD.</p>	<p>In accordance with the ACCOMPLISHMENT INSTRUCTIONS section of Raytheon Aircraft Service Bulletin SB 24–3215, Rev. 1, June 2001, and the Model 1900D Airliner Maintenance Manual.</p>
<p>(3) Inspect the AC inverter to determine if STC #SA00245WI–D is installed.</p> <p>(i) This may be accomplished by checking the logbook and positively showing that STC #SA00245WI–D has never been installed. A person holding a pilot's certificate may accomplish this check.</p> <p>(ii) If, by checking the logbook or visual inspection, it can be positively shown that STC #SA00245WI–D has never been installed, then the requirements of paragraph (d)(4) of this AD do not apply. You must make an entry into the aircraft records that shows compliance with this portion of the AD, in accordance with section 43.9 of the Federal Aviation Regulations (14 CFR 43.9).</p>	<p>Within 6 months after April 21, 2003 (the effective date of this AD).</p>	<p>In accordance with the ACCOMPLISHMENT INSTRUCTIONS section of Raytheon Aircraft Service Bulletin SB 24–3215, Rev. 1, June 2001.</p>
<p>(4) If during the inspection required in paragraph (d)(3), STC #SA00245WI–D is found installed, accomplish the AC inverter sync wire shield modification.</p>	<p>Before further flight after the paragraph (d)(3) inspection of this AD.</p>	<p>In accordance with the ACCOMPLISHMENT INSTRUCTIONS section of Raytheon Aircraft Service Bulletin SB 24–3215, Rev. 1, June 2001, and the Model 1900D Airliner Maintenance Manual.</p>

(5) Do not install, on any affected airplane, any KGS Electronics AC inverter with a S/N between 306 through 803 not identified as Mod 2DD.	As of April 21, 2003 (the effective date of this AD).	Not Applicable.
(6) Do not install STC #SA00245WI-D on any airplane unless the AC inverter modification required in paragraph (d)(4) of this AD is accomplished.	As of April 21, 2003 (the effective date of this AD).	In accordance with the ACCOMPLISHMENT INSTRUCTIONS section of Raytheon Aircraft Service Bulletin SB 24-3215, Rev. 1, June 2001, and the Model 1900D Airliner Maintenance Manual.

(e) *What actions must I accomplish to address this problem if I have a Group 2 airplane? To address this problem, you must accomplish the following:*

<b>Actions</b>	<b>Compliance</b>	<b>Procedures</b>
(1) Inspect the AC inverter to determine if the KGS Electronics AC Inverter part number (P/N) SPC-10(PW), with a serial number in the range of 306 through 803, is installed and is identified as Mod 2DD. (i) This may be accomplished by checking the logbook and positively showing that a Mod 2DD inverter is installed. A person holding a pilot's certificate may accomplish this check. (ii) If, by checking the airplane logbook or visual inspection, it can be positively shown that a Mod 2DD inverter is installed, then the requirements of paragraph (e)(2) of this AD do not apply. You must make an entry into the aircraft records that shows compliance with this portion of the AD, in accordance with section 43.9 of the Federal Aviation Regulations (14 CFR 43.9).	Within 6 months after April 21, 2003 (the effective date of this AD).	In accordance with the ACCOMPLISHMENT INSTRUCTIONS section of Raytheon Aircraft Service Bulletin SB 24-3215, Rev. 1, June 2001.
(2) If during the inspection required in paragraph (e)(1), a Mod 2DD inverter is not installed, accomplish the AC inverter modification.	Before further flight after the paragraph (e)(1) inspection of this AD.	In accordance with the ACCOMPLISHMENT INSTRUCTIONS section of Raytheon Aircraft Service Bulletin SB 24-3215, Rev. 1, June 2001, and the Model 1900D Airliner Maintenance Manual.
(3) Accomplish the AC inverter sync wire shield modification.	Within 6 months after April 21, 2003 (the effective date of this AD).	In accordance with the ACCOMPLISHMENT INSTRUCTIONS section of Raytheon Aircraft Service Bulletin SB 24-3215, Rev. 1, June 2001, and the Model 1900D Airliner Maintenance Manual.

(4) Do not install, on any affected airplane, any KGS Electronics AC inverter with a S/N between 306 through 803 not identified as Mod 2DD.	As of April 21, 2003 (the effective date of this AD).	Not Applicable.
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(f) *What actions must I accomplish to address this problem if I have a Group 3 airplane?* To address this problem, you must accomplish the following:

Actions	Compliance	Procedures
(1) Inspect the AC inverter to determine if the KGS Electronics AC Inverter part number (P/N) SPC-10(PW), with a serial number in the range of 306 through 803, is installed and is identified as Mod 2DD. (i) This may be accomplished by checking the logbook and positively showing that a Mod 2DD inverter is installed. A person holding a pilot's certificate may accomplish this check. (ii) If, by checking the airplane logbook or visual inspection, it can be positively shown that the Mod 2DD inverter is installed, then the requirements of paragraph (f)(2) of this AD do not apply. You must make an entry into the aircraft records that shows compliance with this portion of the AD, in accordance with section 43.9 of the Federal Aviation Regulations (14 CFR 43.9).	Within 6 months after April 21, 2003 (the effective date of this AD).	In accordance with the ACCOMPLISHMENT INSTRUCTIONS section of Raytheon Aircraft Service Bulletin SB 24-3215, Rev. 1, June 2001.
(2) If during the inspection required in paragraph (f)(1), it is found that the Mod 2DD inverter is not installed, accomplish the AC inverter modification.	Before further flight after the paragraph (f)(1) inspection of this AD.	In accordance with the ACCOMPLISHMENT INSTRUCTIONS section of Raytheon Aircraft Service Bulletin SB 24-3215, Rev. 1, June 2001, and the Model 1900D Airliner Maintenance Manual.
(3) Do not install, on any affected airplane, any KGS Electronics AC inverter with serial number in the range of 306 through 803 not identified as Mod 2DD.	As of April 21, 2003 the effective date of this AD).	Not Applicable.

**Note 2:** An owner/operator of an airplane assigned to a Group may disregard the above Group paragraphs that do not apply to his/her airplane.

(g) *Can I comply with this AD in any other way?* You may use an alternative method of compliance or adjust the compliance time if:

- (1) Your alternative method of compliance provides an equivalent level of safety; and
  - (2) The Manager, Wichita Aircraft Certification Office (ACO), approves your alternative.
- Submit your request through an FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Wichita ACO.

**Note 3:** This AD applies to each airplane identified in paragraph (a) of this AD, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For airplanes that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (g) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if you have not eliminated the unsafe condition, specific actions you propose to address it.

(h) *Where can I get information about any already-approved alternative methods of compliance?* Contact Todd Dixon, Aerospace Engineer, FAA, Wichita Aircraft Certification Office, 1801 Airport Road, Room 100, Wichita, Kansas 67209; telephone: (316) 946-4152; facsimile: (316) 946-4407.

(i) *What if I need to fly the airplane to another location to comply with this AD?* The FAA can issue a special flight permit under sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate your airplane to a location where you can accomplish the requirements of this AD.

(j) *Are any service bulletins incorporated into this AD by reference?* Actions required by this AD must be done in accordance with Raytheon Aircraft Service Bulletin SB 24-3215, Rev. 1, June 2001. The Director of the Federal Register approved this incorporation by reference under 5 U.S.C. 552(a) and 1 CFR part 51. You may get copies from Raytheon Aircraft Company, 9709 E. Central, Wichita, Kansas 67201-0085; telephone: (800) 429-5372 or (316) 676-3140. You may view copies at the FAA, Central Region, Office of the Regional Counsel, 901 Locust, Room 506, Kansas City, Missouri, or at the Office of the Federal Register, 800 North Capitol Street, NW., Suite 700, Washington, DC.

(k) *When does this amendment become effective?* This amendment becomes effective on April 21, 2003.

Issued in Kansas City, Missouri, on February 21, 2003.  
Michael Gallagher,  
Manager, Small Airplane Directorate, Aircraft Certification Service.  
[FR Doc. 03-4595 Filed 3-3-03; 8:45 am]  
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